

WHAT IS CLAIMED IS:

1. A substrate for substrate comprising:

a top surface and a back surface, the surfaces being

5 square in shape;

an end surface formed along the thickness thereof;

and

a chamfered surface formed on a perimeter edge

region where the end surface and the top surface meet

10 and another region where the end surface and the back surface meet,

wherein a size of the perimeter edge of the substrate is 300 mm or more on a side and the end surface and the chamfered surface each has a roughened surface

15 having a surface roughness (Ra) ranging from 0.03  $\mu\text{m}$  to 0.3  $\mu\text{m}$ .

2. A substrate for photomask as set forth in Claim 1, wherein the end surface and the chamfered surface each

20 has a roughened surface having a surface roughness (Ra) ranging from 0.05  $\mu\text{m}$  to 0.3  $\mu\text{m}$ .

3. A substrate for photomask comprising:

a top surface and a back surface, the surfaces being

25 square in shape;

an end surface formed along the thickness thereof;  
and

a chamfered surface formed on a perimeter edge  
region where the end surface and the top surface meet  
5 and another region where the end surface and the back  
surface meet,

wherein a size of the perimeter edge of the  
substrate is 300 mm or more on a side and the chamfered  
surface each is a roughened surface polished with an  
10 abrasive tool having a particle size ranging from #700  
to #2,400.

4. A substrate for photomask comprising:

a top surface and a back surface, the surfaces being  
15 square in shape;

an end surface formed along the thickness thereof;  
and

a chamfered surface formed on a perimeter edge  
region where the end surface and the top surface meet  
20 and another region where the end surface and the back  
surface meet;

wherein a size of the perimeter edge of the  
substrate is 300 mm or more on a side and the chamfered  
surface is a smaller surface roughness than the end  
25 surface.

5. A substrate for photomask as set forth in Claim 4, wherein the end surface has a surface roughness (Ra) of 0.05  $\mu\text{m}$  or more.

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6. A photomask blank comprising:  
a substrate; and  
an opaque layer provided on a top surface of the substrate,

10 wherein the substrate including:

the top surface and a back surface, the surfaces being square in shape;

an end surface formed along the thickness thereof; and

15 a chamfered surface formed on a perimeter edge region where the end surface and the top surface meet and another region where the end surface and the back surface meet,

20 wherein a size of the perimeter edge of the substrate is 300 mm or more on a side and the end surface and the chamfered surface each has a roughened surface having a surface roughness (Ra) ranging from 0.03  $\mu\text{m}$  to 0.3  $\mu\text{m}$ .

25 7. A photomask comprising:

a substrate ; and

an opaque layer pattern provided on a top surface  
of the substrate,

wherein the substrate including:

5           the top surface and a back surface, the  
surfaces being square in shape;

          an end surface formed along the thickness  
thereof; and

          a chamfered surface formed on a perimeter edge  
10       region where the end surface and the top surface  
meet and another region where the end surface and  
the back surface meet,

          wherein a size of the perimeter edge of the  
substrate is 300 mm or more on a side and the end  
15       surface and the chamfered surface each has a  
roughened surface having a surface roughness (Ra)  
ranging from 0.03  $\mu\text{m}$  to 0.3  $\mu\text{m}$ .

8.       A substrate for photomask as set forth in Claim 1,  
20       wherein the roughened surface having a surface roughness  
(Ra) ranging from 0.15  $\mu\text{m}$  to 0.20  $\mu\text{m}$ .

9.       A substrate for photomask as set forth in Claim 3,  
          wherein the abrasive tool for polishing the chamfered  
25       surface has a particle size ranging from #800 to #1,000.

10. A substrate for photomask as set forth in Claim 3,  
wherein the chamfered surface is polished with the  
abrasive tool and an abrasive compound.

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11. A photomask blank comprising:  
a substrate; and  
an opaque layer provided on a top surface of the  
substrate,

10 wherein the substrate including:  
the top surface and a back surface, the  
surfaces being square in shape;  
an end surface formed along the thickness  
thereof; and

15 a chamfered surface formed on a perimeter edge  
region where the end surface and the top surface  
meet and another region where the end surface and  
the back surface meet,

20 wherein a size of the perimeter edge of the  
substrate is 300 mm or more on a side and the  
chamfered surface each is a roughened surface  
polished with an abrasive tool having a particle  
size ranging from #700 to #2,400.

25 12. A photomask blank comprising:

a substrate; and

an opaque layer provided on a top surface of the substrate,

wherein the substrate including:

5           the top surface and a back surface, the surfaces being square in shape;

          an end surface formed along the thickness thereof; and

          a chamfered surface formed on a perimeter edge  
10          region where the end surface and the top surface meet and another region where the end surface and the back surface meet,

          wherein a size of the perimeter edge of the substrate is 300 mm or more on a side and the  
15          chamfered surface is a smaller surface roughness than the end surface.

13. A photomask comprising:

a substrate; and

20          an opaque layer provided on a top surface of the substrate,

wherein the substrate including:

          the top surface and a back surface, the surfaces being square in shape;

25          an end surface formed along the thickness

thereof; and

a chamfered surface formed on a perimeter edge  
region where the end surface and the top surface  
meet and another region where the end surface and  
the back surface meet,

wherein a size of the perimeter edge of the  
substrate is 300 mm or more on a side and the  
chamfered surface each is a roughened surface  
polished with an abrasive tool having a particle  
size ranging from #700 to #2,400.

14. A photomask comprising:

a substrate; and

an opaque layer provided on a top surface of the  
substrate,

wherein the substrate including:

the top surface and a back surface, the  
surfaces being square in shape;

an end surface formed along the thickness  
thereof; and

a chamfered surface formed on a perimeter edge  
region where the end surface and the top surface  
meet and another region where the end surface and  
the back surface meet,

wherein a size of the perimeter edge of the

substrate is 300 mm or more on a side and the chamfered surface is a smaller surface roughness than the end surface.